

# INFLUENCE OF PERSONALITY OF CHILDREN AND ADOLESCENTS OF THE UZBEK POPULATION ON MANIFESTATIONS AND DEVELOPMENT OF NEUROCIRCULATORY DYSTONIA

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**Abstract.** The relevance of studying the personality characteristics of children with vegetative vascular dystonia (VVD) is dictated by the fact that many psychosomatic disorders (ischemic and hypertension diseases, bronchial asthma, gastric ulcer and 12 bc, neurodermatitis, etc.) originate in childhood and their primary manifestations are vegetative disorders. According to the literature, among the children with non-communicable diseases who go to the doctor, 50-75% are patients with VVD. Purpose of the study. Study of the influence of the mental state and personality characteristics of patients on the manifestations and development of NCD in children and adolescents of the Uzbek population. Material and methods. We studied 43 patients with NCD (18 boys and 25 girls) aged 7 to 16 years with hypotonic, hypertensive and cardiac types. In the examined group of patients with NCD, children with hypertensive (46.5%) type prevailed. Patients (39.5%) were diagnosed with hypotonic NCD, and in 14 patients with cardiac type. For the study of individual - typological and personal characteristics of children, in addition to clinical and pedagogical observations, traditional experimental - psychological methods were used, allowing the most differentiated approach to the analysis of the personality of a sick child. The results of the study were subjected to variational-statistical processing: mean values ( $\bar{X}$ ), standard deviation ( $T$ ) and its errors ( $+m$ ), testing hypotheses from the normal distribution were tested by Student's t-test. Conducted correlation and dispersion analysis according to the program. Results: patients with NCD are characterized by a pronounced increase in emotional stress, difficulty in making interpersonal contacts and contributing to the violation of the psycho-vegetative regulation of the individual. The predominance of the desire for well-mannered forms of behavior, combined with conscious self-control, prevents the reaction of negative emotions, which contributed to the long-term preservation of emotional stress and further difficulties in adaptation. Patients with NCD usually had combinations of disharmonious personality traits, which led to the appearance of intrapsychic conflicts between dominant and mutually exclusive types of needs. The actual mental state of children with NCD determined by the Kettell method as a whole manifests itself as a personality of a highly neurotic response, which confirms the connection between NDC and personality traits. Conclusions: These intrapsychic conflicts underlay violations of social adaptation in the school and family spheres, and also prevented psycho-vegetative adaptation, which manifested itself in psychopathological and vegetative-somatic disorders in this disease.

**Key words.** neurocirculatory dystonia, children and adolescents, psychosomatics, personality.

**Introduction.** Cardiovascular diseases consistently occupy the first place in the structure of morbidity and mortality worldwide. Currently, the emphasis in the study of cardiovascular diseases has been shifted to childhood [1–3]. The ever-increasing prevalence of cardiovascular disease depends on many factors. In the first place are socio-economic factors: the development of modern civilization, which has dramatically restructured the way of life of people due to the increase in the population of cities, the introduction of electricity and household chemicals, the intensification of labor processes, the complication of curricula, information overload, transport difficulties, changed nutrition and other psychosocial stress. Hereditary predisposition to diseases of the circulatory organs is also important, but it cannot be considered as the main cause, since a sharp increase in morbidity and mortality from these diseases occurred in such a short period of time during which genetic changes are impossible in humans [4,5]. These hazards affect the personality and body of the child and adolescent. Due to difficult everyday circumstances, the activity of the nervous system, its autonomic department, which is responsible for the joint, coordinated activity of organs and systems of the whole organism, is often upset in children. Violation of autonomic regulation can manifest itself in the form of vegetative-vascular dystonia (VVD). The essence of VVD is that the primary

pathological changes do not occur in the “target organ”, but in the apparatus of its nervous regulation. Psychosomatic relations are violated - the connection of mental phenomena, the adaptive activity of the autonomic nervous and humoral systems with the functional activity of the cardiovascular system.

According to the literature, among children with non-communicable diseases who visit a doctor, 50-75% are patients with VVD [6–8]. The relevance of studying the personality characteristics of children with VVD is dictated by the fact that many psychosomatic disorders (ischemic and hypertension diseases, bronchial asthma, gastric ulcer and 12 p.c., neurodermatitis, etc.) originate in childhood and their primary manifestations are vegetative disorders.

Neurocirculatory dystonia (NCD) is a variant of VVD, manifested mainly by disorders of the cardiovascular system. In some cases, an increase predominates, in others - a decrease in blood pressure, and thirdly - the regulation of the activity of the heart is disturbed. Purpose of the study. Study of the influence of the mental state and personality characteristics of patients on the manifestations and development of NCD in children and adolescents of the Uzbek population. Material and methods. We studied 43 patients with NCD (18 boys and 25 girls) aged 7 to 16 years with hypotonic, hypertensive and cardiac types. In the examined group of patients with NCD, children with hypertensive (46.5%) type prevailed. Patients (39.5%) were diagnosed with hypotonic NCD, and in 14 patients with cardiac type. For the study of individual - typological and personal characteristics of children, in addition to clinical and pedagogical observations, traditional experimental - psychological methods were used, allowing the most differentiated approach to the analysis of the personality of a sick child: 1. Examination and observation of the behavior of children in the experimental situation in order to identify the features of the emotional-volitional sphere; 2. Schwanzler's partially standardized diagnostic interview - conversation;

3. Pathocharacterological diagnostic questionnaire (PDO) - for children and adolescents from 10 to 18 years old;

4. Study of self-esteem by the Dembo-Rubinstein method;

5. Children's version of the Cattell personality questionnaire for children from 8 to 12 years old;

6. Children's version of the Eysenck personality questionnaire for children;

7. Projective methods of personality research;

a) Rosenzweig picture frustration (stress) test for children and adolescents; b) Rorschach tests;

8. Standard questionnaire-characteristics for a child (filled out by a teacher and parents);

9. Identification of the characteristics of the microsocial environment - families and schools;

10. Carrying out an ECG study (in 12 standard leads), echoencephalography, rheoencephalography, etc.;

11. Measurement of blood pressure, diastolic blood pressure, counting the pulse rate;

12. Study of vegetative homeostasis (vegetative tone, reactivity, security). In addition to these studies, generally accepted clinical methods were used (general blood count, urine, feces, chest and skull radiography), biochemical methods with the determination of total protein, residual nitrogen, urea, potassium and calcium in blood serum, rheumatic tests. Specialist consultations were held (psychiatrist, psychoneurologist, endocrinologist, cardiorheumatologist, traumatologist). An objective study of children was carried out in a children's hospital using generally accepted methods - examination, palpation, percussion, auscultation.

The results of the study were subjected to variational-statistical processing: mean values (X), standard deviation (T) and its errors (+m), testing hypotheses from the normal distribution were tested by Student's t-test. Conducted correlation and dispersion analysis according to the program. The centile distribution of personal factors indicators was calculated using a mathematical algorithm.

Results. From the data presented in table No. 1, it follows that patients with NCD in general are significantly extraverted ( $17.3 \pm 0.6$  and  $16.7 \pm 0.4$ ,  $P < 0.001$ ), which makes it possible to characterize them as more sociable, active and prone to leadership. For hypotonic and cardiac types, the increase in sociability was not significant ( $P > 0.05$ ). Patients with NCD of the hypotonic type are characterized by depressed mood or

apathy. Most children are disturbed by obsessive fears for somatic health, they consider themselves seriously ill. A high degree of anxiety is characteristic of both children with hypertonic, hypotonic, and cardiac types of NCD. Patients with the cardiac type of NCD were characterized by a sharp weakening of physical and intellectual performance, as well as phobias related to confined spaces, driving in transport, crowds, and heights. Among the psychopathological manifestations, cardialgia and other unpleasant sensations in the region of the heart occurred constantly ( $P < 0.05$ ) and were the most significant for a patient with a cardiac type of NCD.

Table-1

**Average scores of indicators (in points) according to the Eysenck questionnaire in children of the control group and patients with NCD**

Indicators	Standardization data		Neurocirculatory dystonia		Hypertonic type	Hypotonic type	Cardiac type
	M	D	M	D			
Extraversion - Introversion	15,1 ± 0,4	14,3 ± 0,4	17,3 ± 0,6*	16,7 ± 0,4*	17,6 ± 0,4*	16,4 ± 0,7	15,6 ± 0,9
Neuroticism	12,6 ± 0,5	13,3 ± 0,5	15 ± 0,8*	16,6 ± 0,6*	17,0 ± 0,7*	15,7 ± 1,5	15,8 ± 1,4
The data are statistically significant ( $P < 0.05 - 0.001$ ) compared with healthy children.							

A high rate of psycho-emotional instability in patients ( $15 \pm 0.8$  and  $16.6 \pm 0.6$   $P < 0.001$  in boys and girls) indicates an increased level of anxiety and neuroticism. Patients with NCD are irritable or tense. Often dissatisfied with their surroundings. The hypertonic type is characterized by a high sense of responsibility and intensity. More than half of the patients show signs of neuropathy. The current mental state of children with NCD determined by the Kettell method as a whole manifests itself as a personality of a highly neurotic response, which confirms the connection of NCD with personality traits. Table. 2. In the group of patients with NCD, the most characteristic were mild and frequent occurrence of unmotivated anxiety, mood swings, subdepressive episodes in premorbidity. Mild vulnerability and sensitivity are indicated by a decrease in factor C ( $3.2 \pm 0.5$  and  $2.7 \pm 0.4$ ;  $P < 0.001$ ). They are also distinguished by pronounced incredulity, resentment, aggressiveness, persistence in achieving the goal and ambitious aspirations (the rise of the "E" factor  $6.1 \pm 0.3$  and  $6.6 \pm 0.4$ ,  $P < 0.05$ ). A decrease in the "H" factor ( $3.2 \pm 0.3$  and  $1.6 \pm 0.4$  in boys and girls,  $P < 0.001$ ) reflects the presence of high self-doubt, a tendency to constant doubts when making decisions, to the formation of obsession, a decrease entrepreneurial spirit and energy.

Dissatisfaction with the situation, one's behavior in it, and a high intensity of unreacted urges were reflected in the rise of Q and Q3 factors ( $6.8 \pm 0.3$  and  $7.04 \pm 0.15$ ;  $P < 0.001$   $6.8 \pm 0.4$  and  $6.9 \pm 0.3$ ;  $P < 0.001$  in boys and girls, respectively). In general, patients with NCD are characterized by a pronounced increase in emotional stress, difficulty in making interpersonal contacts and contributing to the disruption of the psycho-vegetative regulation of the individual. The predominance of the desire for well-mannered forms of behavior in combination with conscious self-control (increased factors I and Q3 ( $7.1 \pm 0.6$  and  $7.0 \pm 0.5$ ) prevents the response of negative emotions, which contributed to the long-term preservation of emotional stress and further difficulties in adaptation. Patients with NCD usually had combinations of disharmonious personality traits, which led to the appearance of intrapsychic conflicts between dominant and mutually exclusive types of needs. These intrapsychic conflicts underlay violations of social adaptation in the school and family spheres, and also prevented psycho-vegetative adaptation, which manifested itself in psychopathological and vegetative-somatic disorders in this disease. Comparison of the average profile of individuals with NCD and the control group revealed significant differences. The average profile (Fig. 1.) of the group of people with NCD differs from the average profile of the control group in features that reflect higher anxiety (factor «Q  $6.8 \pm 0.3$  and  $7.04 \pm 0.15$ ;  $P < 0.01$ ), which is accompanied by a tendency to the emergence of unpleasant somatic sensations, a more pessimistic coloring of perspective and great rigidity. According to F.B. Berezin et al (18), due to this rigidity, once the affect of anxiety has arisen, it does not fade for a long time. Apparently, this circumstance can contribute to the repetition of anxious reactions. The above profile features were combined with signs indicating a relatively high level of tension, irritability and frustration (high Q4

$6.8 \pm 0.4$  and  $6.9 \pm 0.3$ ;  $P < 0.001$ . Decreased mood and anxious affect in NCD patients were significantly to a greater extent than in healthy people, could disrupt adaptation to the immediate social environment, which is reflected by deep "dips" of the curve (factors "H"  $3.2 \pm 0.3$  and  $1.6 \pm 0.4$ ; "C"  $3.2 \pm 0.5$  and  $3.3 \pm 0.4$   $P > 0.05$ ) profile.

An increase in activity and readiness for action is reflected to a greater extent on the profile curve by «peaks» (factors «E» and «F».) Thus, in patients with NCD, conflicts between the need to be in the center of attention of others (rising factors (A, E, E, F), the desire to focus on non-conformal, special internal criteria of behavior, conflicts between selfish and altruistic motives, emotional immaturity (factors «H» and «I»)), demonstrativeness, weakness of mental «delays» and ambitious attitudes that are especially significant for the individual («E», «G»). The peculiarity of the reaction to frustration depends on the nature of the individual development of the subject, which in turn is based on a combination of certain genetic premises and social factors. This reaction seems to be based on two factors. On the one hand, these are the features of mental response associated with the personal characteristics of the subject, on the other hand, there are special relationships between two aspects of response: mental and vegetative. Finally, it is possible that a combination of both of these moments is necessary for the emergence of NCD. We conducted a study of the considered possibilities of reaction to frustration in sick children with NCD. Variants of psycho-emotional response to frustration in patients with NCD and healthy people significantly differed (Table 3).

In children with NCD, the extrapunitive reaction «E» was significantly reduced ( $9.05 \pm 0.8$  and  $8.8 \pm 0.5$  in boys and girls). Decreased mood and anxious affect in sick children with NCD to a much greater extent than in healthy children could disrupt adaptation to the immediate social environment, more often causing the need for help «IP» ( $13.2 \pm 0.5$  and  $13.0 \pm 0.6$ ;  $P < 0.05$  in boys and girls) and could disrupt behavior control to a somewhat greater extent, however, as can be seen from Table 5.17, there was no extrapunitive reaction that was quite typical for the control group. Violation of behavior control was accompanied by the restriction of social contacts and the severity of schizotimism «M» (12.1% and 14.2% vs. control 34.2 and 34.7%;  $P < 0.05$  in boys and girls). The given data give grounds to believe that persons with NCD are characterized both by peculiar personality traits that cause a tendency to certain types of mental reactions, and by peculiar relationships between the mental and vegetative aspects of the response, which determine the originality of the autonomic reaction. Data on the study of patients with NCD by the Rorschach method are presented in Table 4. and compared with the results obtained in the examination of healthy children. As a result of the analysis of Table 4, sharp differences were found in the quality of shaping. In patients with NCD, color responses prevailed ( $3.5 \pm 0.5$  and  $2.7 \pm 0.4$  in boys and girls,  $P < 0.05$ ) with a slight decrease in the number of kinesthetic ones ( $0.2 \pm 0.06$  and  $0.3 \pm 0.05$  in boys and girls), which indicates the predominance of general neurotic symptoms. For them, according to Rorschach, reproductive rather than creative thinking, labile affectivity and superficial contacts with other people are more characteristic. In patients with NCD, color shock is quite pronounced. A decrease in interpretations ( $5.3 \pm 0.5$  and  $5.7 \pm 0.6$  in boys and girls) and a significant increase in «D» responses indicate a decrease in the ability to synthesize. A decrease in kinesthetic interpretation, according to Rickers-Ovsiankina, is a sign of the attenuation of emotional reactions (Fig. 2.). Along with this, when studying the protocols of patients with NCD, other features were found that distinguish patients from healthy people: frequent refusals, especially for tables IV, VIII, IX, X, an indication of symmetry, an increase in CF-responses, an increase in A + Ad, interpretation of stimulus material in the form of questions, an increase in the percentage of answers in terms of content PI, a decrease in original answers. (Table 5). As can be seen from Table 6. and Fig. 3., the type of experience in NCD is, on the whole, extra-intense. In contrast to the healthy population of schoolchildren, in the group of NCD patients there is a significant increase in the mixed type of extratension. The ambiguous personality variant was not registered. The use of the objective assessment scale of the pathocharacterological diagnostic questionnaire (PDO), (112) showed that the number of adolescents with character accentuations significantly differed ( $P < 0.001$ ) among healthy ones (52.35%). In contrast to healthy adolescents, the following types of character accentuation were significantly more common in patients with NCD: cycloid ( $P < 0.05$ ), labile ( $P < 0.001$ ), sensitive ( $P < 0.001$ ). Psychoasthenic, hysteroid and epileptoid types of accentuation were also more often observed in adolescents with NCD, but this difference was not statistically significant ( $P > 0.05$ ). The severity of accentuation was not the same in adolescents with different types of NCD. (Table 7.) In

NCD of the hypertensive type, unstable, labile and cycloid types of accentuation were diagnosed significantly more often ( $P < 0.01$ ), and sensitive, labile and cycloid types were characteristic of the hypotonic type of NCD. A significant predominance of individuals with character accentuations among patients with NCD can be considered in terms of the pathogenetic role of emotional stress and other psychological factors in the development of NCD of the hypertensive type. According to A.E. Lichko, with unstable, epileptoid and asthenoneurotic types of character accentuation, psychological conflict is especially characteristic. Thus, the results of the studies presented by us suggest that personality factors play a certain role in the development of hypotonic, hypertonic, and cardiac types of NCD in children. Recently, much attention has been paid to the study of the role of psychosocial factors in the genesis of NCD. The lack of clear ideas about the mechanism of the pathogenic influence of psychosocial factors in childhood severely limits the possibilities for the prevention and treatment of functional psychosomatic disorders. In order to study the etiological role of psychotraumatic factors and their participation in the formation of the clinical picture of NCD, we examined the micro-social environments of the family and school of children with NCD. For this purpose, we used the questionnaire developed by us «Studying the influence of the microsocial environment on the formation of a pathological personality» [rational proposal adopted for implementation in AndGosMi No. 1288 of 12.06.99]. An in-depth survey of parents of children and adolescents with NCD and their families revealed data of practical interest both for pediatricians and specialists in related disciplines. 6.8% of married couples had short-term disagreements. More than half of the families of children with NCD (59%) had frequent and lengthy quarrels that turned into scandals (22.7%). In general, 88.5% of families were diagnosed with destructive relationships. A significant share in the hierarchy of causes of frequent conflicts between spouses is occupied by the temper of a husband or wife (20.7%). As for the destructive relations between parents and children, they are to some extent a consequence of the conflict of marital relations. Most conflicts between parents and children arise due to irritability and fatigue of parents (19.2%), low academic performance of schoolchildren (19.2%), their unwillingness to participate in homework (11.5%), bad behavior (30.7%). Some idea of the level of pedagogical culture of parents is given by our survey of parents of children with NCD on the methods used in raising children. On the whole, orders and demands (23.4%), prohibitions without special explanations (29.8%), and physical punishment (21.2%) took the first place in the family's pedagogical arsenal. Thus, it was possible to obtain information about the features of the participation of psychotraumatic factors in the etiology of NCD. The influence of a negative family environment was revealed. In families of children with NCD there is a chronic neuro-psychic overstrain. The latter turns out to be against the background of external well-being in the family and school. Stress is not associated with strong and one-time shocks, resentment, disappointment. It is a reflection of the objectively existing difficulties in the life and study of the child, the overcoming of which exceeds his adaptive capabilities.

According to our data, such conditions are most often created as a result of excessive demands on him in the family and school. Parents force their child to succeed in any way. They, as a rule, overestimate the capabilities of their son or daughter, use authoritarian methods to achieve their goals (order, demand, physical punishment, prohibition without special reasons).

Findings. Thus, in the families of children with NCD, upbringing is typical of the type of «hyper-custody». Increased hypersocial attitudes, insufficient emotional contact between parents and children, pedagogical illiteracy of parents in children developed a high level of neuroticism, a sense of internal tension, irritability, attention distraction, depressed mood or apathy, decreased physical and intellectual performance, phobias, desire for leadership. Another group of pathogenic microsocial factors is acute conflict situations. The most typical conditions for the emergence of acute conflicts were quarrels with parents and teachers, situations of clashes with peers (when striving for leadership, worries about relationships between parents.) In these children, personality manifestations were unstable. Clinically, NCD was not limited to disorders of vascular tone. Often there were complaints of headaches, nausea, pain in the chest and abdomen, heaviness and pain in the region of the heart, etc. The majority of the children examined by us 40 (93%) with NCD had unfavorable factors of the microsocial environment, which, to one degree or another, participated in the formation of psychosomatic disorders. The identified acute and chronic types of psychotraumatic situations play a different role in the formation of the clinical picture of NCD.

According to D. N. Isaev, acute and severe injuries most contribute to the emergence of secondary neuropsychic syndromes. Repeatedly repeated mental stresses are related to the vegetative-vascular level of response, and by causing long-term pressor reactions of blood vessels, they are directly involved in the formation of a pre-hypertensive state. Psychogenic stresses of greater depth, arising against the background of prolonged nervous overstrain, contribute to the development of more detailed pictures of psychovegetative disorders.

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